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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,096

01/17/2006

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EXAMINER

ROSATI, BRANDON MICHAEL

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

11/24/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,096	<b>Applicant(s)</b> IGAMI, TAKAZI	
	<b>Examiner</b> BRANDON M. ROSATI	<b>Art Unit</b> 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/14/2008</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This action is in response to the amendment filed on 6/16/2008. Currently claim 2 has been canceled and claim 1 is pending.

#### ***Specification***

2. The disclosure is objected to because of the following informalities: the terms “in claim 2” and “in claim 1” on page 3, last paragraph bridging pages 3 and 4 should be deleted. Also, please check the rest of the Specification for additional informalities similar to the one noted above.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support for the term “consists” which is found in claim 1, lines 12 and 14. The term “consists” is a closed ended term, meaning the alloy in the claim can not have any other elements other than the group listed. However, applicant's specification uses the term "including," which can have other elements in addition to the ones being claimed. Furthermore, in applicant's specification, aluminum alloy 7072 is utilized. This substance is well known to contain

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additional elements other than Zn, Mg, and Al. Thus, applicant has introduced new matter by using the term “consists,” which has limited the claim further than what was originally disclosed.

5. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear how aluminum 7072 can contain only Zn, Mg, and Al. Extrinsic evidence (see enclosed Military Standardization Handbook, chart on page 35) clearly shows that aluminum 7072 contains additional elements such as Si. It is not clear how the applicant’s disclosed aluminum alloy 7072 is different from the art recognized standard.

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinnaga et al. (Japanese Patent JP 2002-71286) in view of Kato et al. (Japanese Patent JP 11-80870) in view of Hasegawa et al. (U.S. Patent No. 6,129,143) in further view of Yoshidomi et al. (U.S. Patent No. 6,387,540).

Regarding claim 1, Shinnaga et al. disclose an aluminum heat exchanger comprising a flat tube formed by bending in a width direction an aluminum strip (i.e. bar) that has a core material made of aluminum, coated with a brazing material on one surface, and a sacrificial anode layer on the other surface, so that the brazing material is on the outside surface and the sacrificial anode layer is located on the inner surface (Paragraphs [0010-0012]). It is noted that

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claim 1 is a product by process claim and that the product by process limitation does not limit the claim to the recited step, just the structure obtained by performing the step. Shinnaga et al. do not disclose the specific alloys used for the brazing metal, the core metal, and the sacrificial anode material, which included certain parentages of weight of certain elements or the use of multiple flat tubes fixed together by brazing. However, Kato et al. disclose a brazing metal consisting of an aluminum alloy in which Si is 6-13% by weight (Kato, Paragraph [0022]), the core metal (i.e. core material) consisting of Cu, Si which is 0.3-1.0% by weight and Mn which is 0.5-1.5% by weight, the balance being Al (Paragraph [0007]). Furthermore, Kato et al. disclose the use of a sacrificial anode material which consists of Zn which is 0.5-2.5% by weight, Mg which is 0.3-0.6% by weight, the balance being aluminum as well as an additional element in the sacrificial anode, Si. Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the teachings of Shinnaga et al. with the specific alloys of Kato et al. because these materials as well as their percentages are well known in the art to produce a heat exchanger that is excellent in reinforcement and corrosion resistance. Shinnaga et al., as modified by Kato et al., do not disclose the core consisting of Cu being 0.15% by weight (the reference disclose 0.2-0.6%). However, Hasegawa et al. disclose a core material having Cu of 0.05 to 0.5% (Abstract). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Shinnaga et al. and Kato et al. with the core material having Cu of 0.05-0.5% of Hasegawa et al. because it would be routine for one of ordinary skill in the art to optimize the range of the amount of Cu in the core material, since this would be result effective and thus parameters such as strength and cost could be routinely varied to maximize and minimize each respectively. Furthermore, Shinnaga et al., as

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modified by Kato et al., do not disclose the sacrificial anode not containing Si, but do disclose the specified amounts of Zn (i.e. 0.5-2.5%) and Mg (i.e. 0.3-0.6%). However, Yoshidomi et al. disclose a brazing sheet which undergoes brazing which has a sacrificial anode alloy on it which consists of Al, Zn, and Mg only, but it is silent as to the specified amounts (Column 1, lines 49-65). Furthermore, the reference discloses a plurality of flat tubes which are disposed parallel to each other and being fixed together by a brazing furnace to form a core (Figures 1 and 2). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Shinnaga et al., Kato et al., and Hasegawa et al. with the sacrificial anode which consists of only Al, Zn, and Mg, as taught by Yoshidomi et al. because it would be obvious to eliminate an element with the loss of its function (see MPEP 2144.04). The Si is used to add additional strength, however, if this strength is not required in the sacrificial anode, it would be obvious to one of ordinary skill in the art to eliminate the Si, which is demonstrated by Yoshidomi et al. and this sacrificial anode is still capable of effectively being used since this is a well known sacrificial anode alloy used because of its good corrosion resistance. Furthermore, an additional motivation to combine is that it would be routine for one of ordinary skill in the art to optimize the range of the amount of Zn and Mg in the sacrificial anode based on the ranges found in Kato et al. since this would be result effective and thus parameters such as strength and cost could be routinely varied to maximize and minimize each respectively.

### ***Response to Arguments***

8. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakai et al. (U.S. Patent No. 5,759,302) discusses Cu.

Raybould et al. (U.S. Patent No. 5,857,266) discusses a heat exchanger with Cu.

Inabayashi et al. (U.S. Patent No. 6,063,510) discusses Cu.

Yamada et al. (U.S. Patent No. 4,238,233) discusses a sacrificial anode.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON M. ROSATI whose telephone number is (571)270-3536. The examiner can normally be reached on Monday-Friday 8:00am- 4:30pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on (571) 272-4834 or (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BMR  
11/18/2008

/Cheryl J. Tyler/  
Supervisory Patent Examiner, Art Unit  
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